

IN THE CLAIMS

Claim 1 (previously presented). Process for producing elastane fibres by the dry spinning process or the wet spinning process using spinning solutions of elastane recycling material, optionally with the addition of fresh elastane solution, wherein

- a) the waste obtained from elastane fibres, is cut up to a cut length of at least 0.1 mm,
- b) the cut elastane fibers and 0.1 to 2 wt.%, based on the content of solid elastane, of a secondary aliphatic amine are introduced into the spinning solvent,
- c) the mixture of cut elastane fibers, spinning solvent and secondary aliphatic amine is heated at a temperature of 60°C to 150°C, with homogenisation,
- d) the resulting homogeneous elastane spinning solution is prefiltered,
- e) optionally with the addition of fresh elastane solution, the elastane spinning solution is mixed at 70°C to 140°C with a fresh elastane solution, in any mixing ratio and heating is continued,
- f) the resulting spinning solution is cooled to a temperature of at not more than 70°C, and filtered once more,
- g) the finished spinning solution is optionally remixed, and subsequently spun into elastane fibres by the dry spinning process or the wet spinning process.

Claim 2 (previously presented). Process according to claim 1, wherein the elastane waste comprises both elastanes based on polyether and elastanes based on polyester, or wastes of mixed polyether- and polyester-containing elastanes in any mixing ratio.

Claim 3 (previously presented). Process according to claim 1 wherein the secondary aliphatic amine used is diethylamine (DEA), in a quantity of 0.3 to 1 wt.%, based on solid elastane.

Claim 4 (currently amended). Process according to Claim 1, wherein the concentration of the finished spinning solution in step ~~h)~~ g) is from 22 to 45 wt.%.

Claim 5 (previously presented). Process according to Claim 1, wherein dimethylacetamide is used as the spinning solvent.

Claim 6 (currently amended). Process according to Claim 1, wherein the elastane spinning solution is mixed with a fresh elastane solution in step ~~f)~~ e) for a period of 5 to 60 minutes.

Claim 7 (previously presented). Process according to Claim 1, wherein the total mixing time in steps b) and c) together is at least 10 minutes.

Claim 8 (previously presented). Process according to Claim 1, wherein the solution temperature in step c) is from 80°C to 120°C.

Claim 9 (previously presented). Process according to Claim 1, wherein in the case where a mixture of waste elastane solution and fresh elastane solution is used, the required addition of secondary aliphatic amine to the fresh elastane solution is carried out not in step b) but in step f) and in the form of a stock batch of secondary aliphatic amine and fresh elastane solution.

Claim 10 (previously presented). Process according to Claim 1, wherein the recycling spinning solution and the fresh solution are preferably mixed together in a static mixer, at 70°C to 140°C for a period of 5 to 30 minutes and the spinning solution is subsequently cooled to 50°C to 70°C.

Claim 11 (previously presented). Process according to Claim 1, wherein the solids content of the recycling spinning solution in proportion to the solids concentration of the total spinning solution comprising recycling spinning solution and fresh elastane solution is at least 10 wt.%.

Claim 12 (previously presented). Process according to Claim 1, wherein the spinning of the spinning solutions by the wet spinning process is effected from spinnerets having a nozzle hole diameter of 0.10 to 0.3 mm.

Claim 13 (previously presented). Process according to Claim 1, wherein the elastane fibers in step a) is introduced in portions into the vortex created by an agitated disperser in the previously prepared spinning solvent.

Claim 14 (previously presented). Elastane fibres obtained from a process according to Claim 1 with a titre of up to 10,000 dtex, and fibre strengths of 0.5 to 0.95

cN/dtex and elongation at tear of 500 to 750%.

Claim 15 (previously presented). Device for carrying out the process of Claim 1, comprising at least one heatable mixing tank with an inlet for solid material, a mixer and a dispersing unit, a mixing zone with static mixing elements, connected downstream of the mixing tank, a cooling zone with mixing elements and a filtering unit for subsequently filtering the prepared elastane spinning solution.

Claim 16 (previously presented). Device according to claim 15, wherein the dispersing unit consists of at least one agitated disperser

Claim 17 (previously presented). Device according to claim 16, at least one agitated disperser is equipped with screw-type segmented appliances.

Claim 18 (previously presented). Device according to claim 16, wherein the at least one agitated disperser is equipped with screw-type segmented appliances selected from the group consisting of suction cutters, webbed rings, kneading spirals and multiple current appliances.

Claim 19 (previously presented). Device according to Claim 15, wherein the mixer is an anchor mixer and the mixing tank is provided with an additional cleaning device for the internal fittings of the mixer.

Claim 20 (currently amended). The process of Claim 1, wherein said cut length is at least 1 ~~mm~~ mm.

Claim 21 (currently amended). The process of Claim 20, wherein said cut length is from 2 to 10 ~~mm~~ mm.

Claim 22 (currently amended). The process of Claim of 21, wherein said cut length is 3 to 5 ~~mm~~ mm.

Claim 23 (previously presented). The process of Claim of 1, wherein the cooling of step f) is to a temperature of 50°C to 70°C.

Claim 24 (previously presented). The process of Claim of 1, wherein the optional remixing of step g) is by stirring and degassing.

Claim 25 (previously presented). The process of Claim of 3, wherein said quantity of diethylamine is 0.5 to 0.8 wt %.

Claim 26 (previously presented). The process of Claim of 4, wherein said concentration is from 30 to 40 wt %.

Claim 27 (previously presented). The process of Claim of 7, wherein said total mixing time is from 60 to 150 minutes.

Claim 28 (previously presented). The process of Claim of 26, wherein said total mixing time is 90 to 120 minutes.

Claim 29 (previously presented). The process of Claim of 9, wherein said secondary aliphatic amine is diethylamine.

Claim 30 (previously presented). The process of Claim of 10, wherein said temperature is 100°C to 120°C.

Claim 31 (currently amended). The process of Claim 12, wherein said hole diameter is 0.1 to 0.2 ~~mm~~ mm.

Claim 32 (previously presented). The process of Claim 13, wherein said elastane fibers is introduced via a metering or weighing device at a rate of 1 to 10 kg/minute.

Claim 33 (currently amended). The device of Claim 16, wherein said dispersing unit consists of two agitated ~~dispersing~~ dispersers.--